MacBook Core 2 Duo Heat Sink Replacement

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INTRODUCTION

The heat sink helps keep the processor cool and happy.

TOOLS:

- Arctic Silver ArctiClean (1)
- Arctic Silver Thermal Paste (1)
- Coin (1)
- Phillips #0 Screwdriver (1)
- Phillips #000 Screwdriver (1)
- Phillips #00 Screwdriver (1)
- Spudger (1)

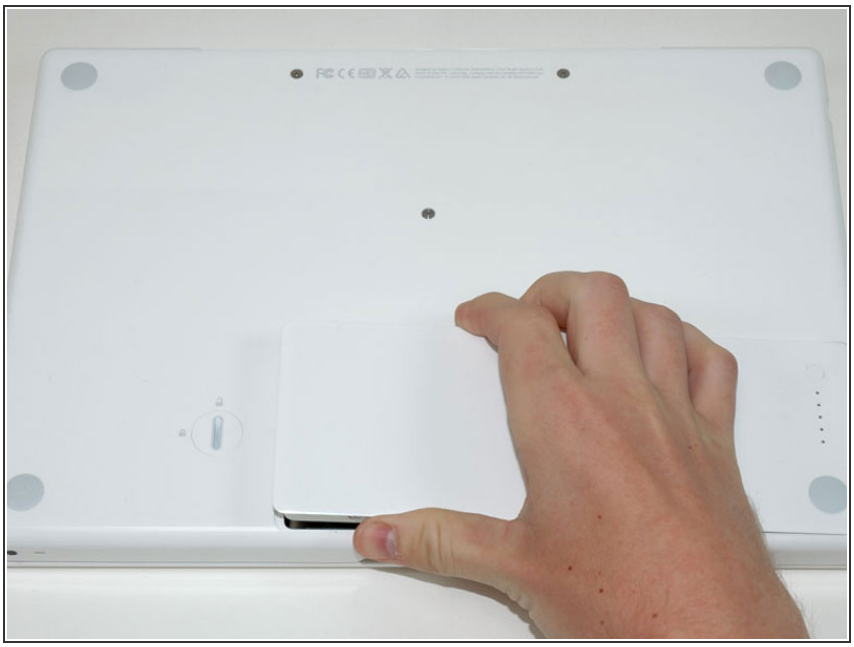
PARTS:

- MacBook Heat Sink (Three-wall Connectors) (1)
- MacBook Santa Rosa/Penryn Heat Sink (1)
- MacBook (Mid 2009) Heat Sink (1)
- MacBook (Early 2009) Heat Sink (1)

Step 1 — Battery

- Use a coin or spudger to rotate the battery-locking screw 90 degrees clockwise.

Step 2



- Lift the battery out of the computer.

Step 3 — Memory Cover

- Unscrew the three evenly-spaced Phillips screws from along the rear wall of the battery compartment.

The screws are captive to the metal memory cover so you cannot lose them.

Step 4

- Rotate the L-shaped memory cover so it clears the battery compartment opening and lift it up and out of the computer.

Step 5 — Upper Case

- Remove the following 3 screws:
  - One 11 mm Phillips#00 in the middle of the case. (Head: 5mm dia. x .75mm thick)
  - Two 14.5 mm Phillips #00 (Head: 5mm dia. x .75mm thick)

If the screws stick in the case, you can use a magnetized screwdriver to draw them out.

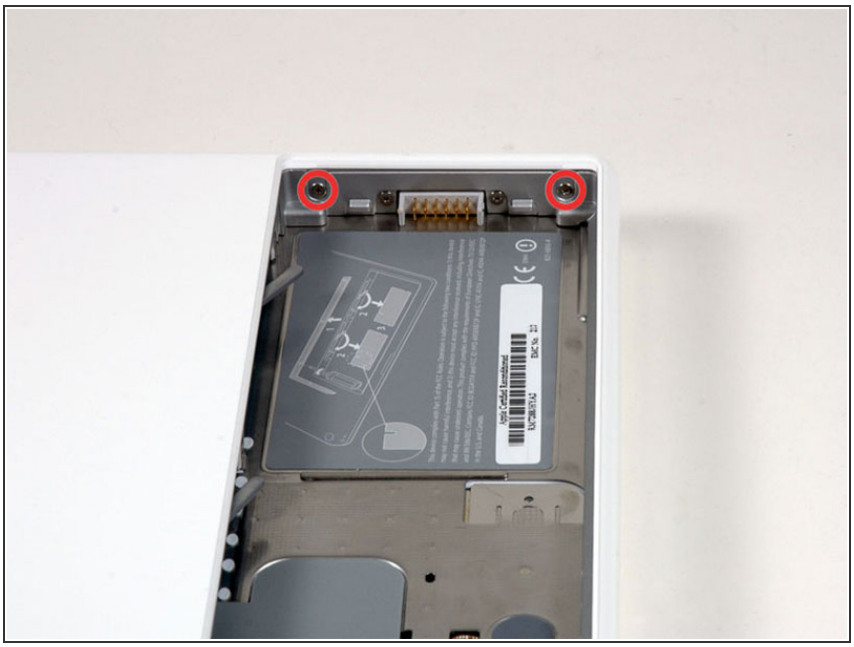
The shorter of the three screws goes in the middle.

Step 6

- Remove the following 3 screws from the rear wall of the battery compartment:
  - One 3 mm Phillips #0. (Head: 2.75 mm. dia.)
  - Two 4 mm Phillips #0 on the either side. (Head: 2.75mm dia.)

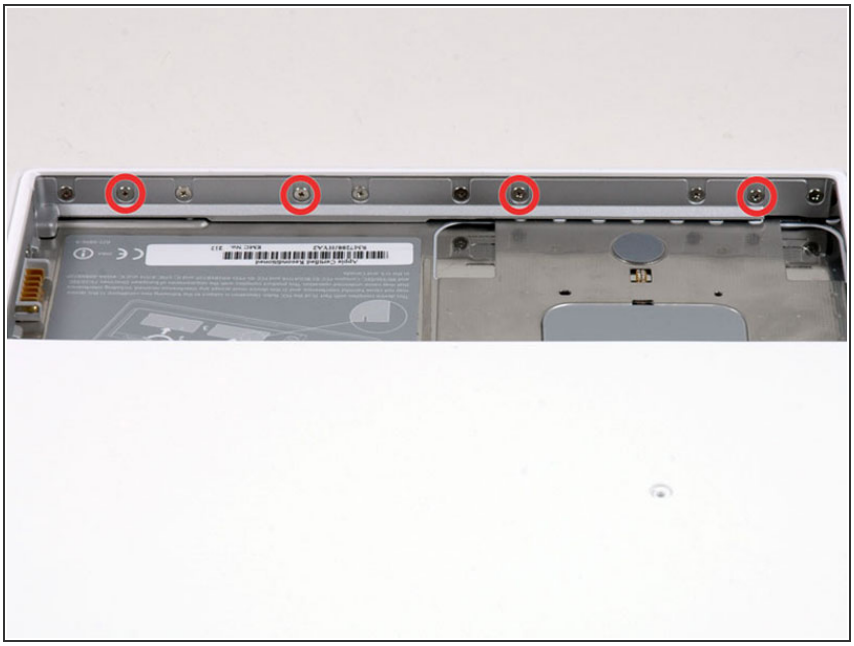
Take extra caution with these screws as they can strip easily.

Step 7



- Remove the two Phillips screws from either side of the right wall of the battery compartment (not the ones closest to the battery connector).
  - Two 6.25 mm Phillips #000. (Head: 4 mm. dia. x .5mm thick)

Step 8



- Remove the four indicated Phillips screws from the front wall of the battery compartment. When working from the left, remove the 2nd, 4th, 7th and 9th screw.
  - Four 3.25 mm Phillips #000. (Head: 4 mm. dia. x 4mm thick)

Step 9

- Remove the following 4 screws from the back of the computer:
- The longer screws go on the inside, shorter screws on the outside.
  - Two 11 mm Phillips #00, with Shank (2.2mm dia. x 2 mm len.) (Head: 3.2 mm. dia. x .5mm thick)
  - Two 7.25 mm Phillips #00, with Shank (2mm dia. x 3.75 mm len.) (Head: 3.2 mm. dia. x .5mm thick)

Step 10

- Remove the two Phillips screws from the optical drive side of the computer.
  - Two 5.2 mm Phillips #00, with Shank (2.3mm dia. x 3.5 mm len.) (Head: 3.2 mm. dia. x .5mm thick)

It is not necessary to remove the similar screws on the other side of the computer.

Step 11

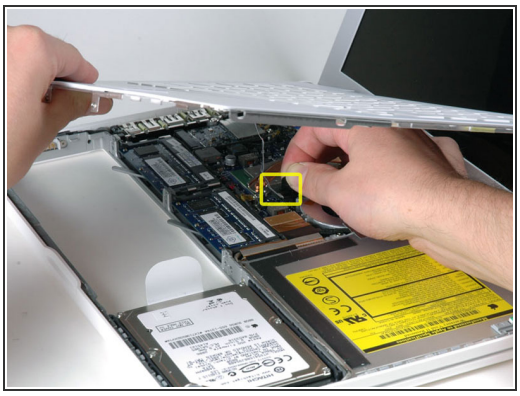
There's a trackpad and keyboard ribbon connecting the upper case to the logic board, so don't pull the upper case off entirely just yet.

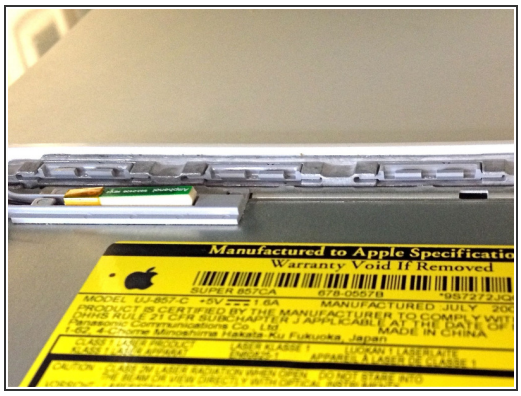
- Starting near the display and working around to the front of the computer, pry up on the upper case. A plastic opening tool or a medium hard guitar pick may help you to do this.

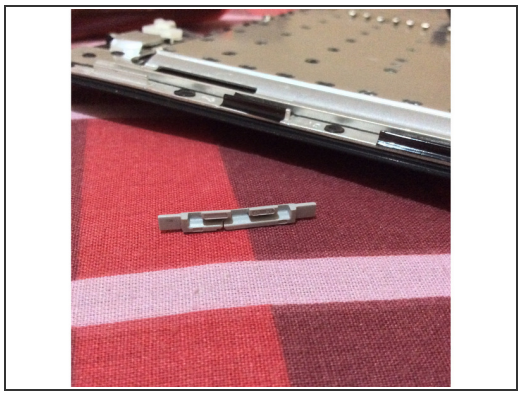
The upper case is likely to stick at the connection above the optical drive. If this is the case, first free all other sides, then proceed to pull upward on the upper case from either side of the optical drive opening.

If you stand the base on end to get a better look you may displace the total of 4 grey plastic clips that hold the keyboard in place. Don't panic. They slide into slots at the top right-most edge near the CD drive.

Step 12







- While holding up the upper case, pull up the black tab of the silver cable away from its connector.

If there is no black tab, you can also use a spudger to gently pry the connector from its housing. This connector is tall, so be sure to pry straight up.

If you happen to break your upper case cable when removing the upper case, we stock the cable individually and we have a guide that makes replacing it easy.

- While you have the upper case removed, you may want to take the opportunity to remove dust, hair, etc. It's best to use a can of compressed air, though if you use a brush, make sure that its bristles are made of a material (usually animal hair) that doesn't generate static electricity, which can destroy electronics.

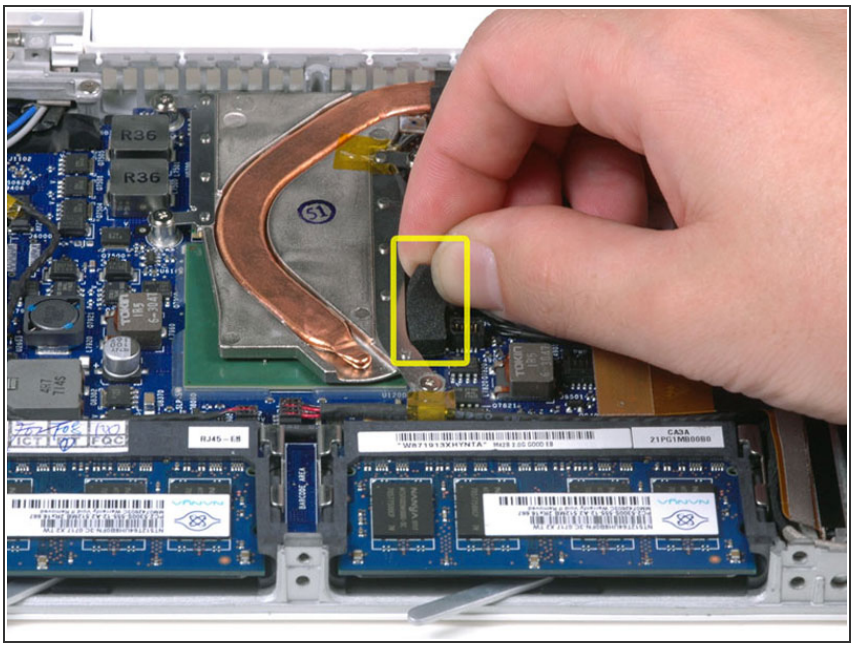
Upon reassembly, there are 4 grey plastic clips on the optical drive side of the keyboard (refer to second picture). They must be installed in their slots for the keyboard to snap in properly.

To make the reassamble process easier, it's better to pull out the clips first by pulling it straight up gently. Be careful not to put too much strength because it will break.

Step 13 — Heat Sink

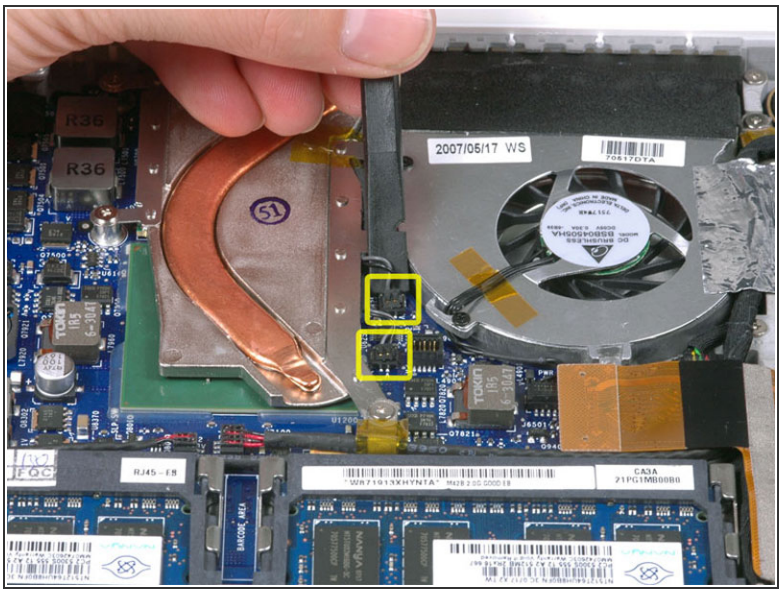
- Carefully peel up the black felt tape between the heat sink and fan.

Step 14



- Peel up the small black rubber cover from the right side of the heat sink.

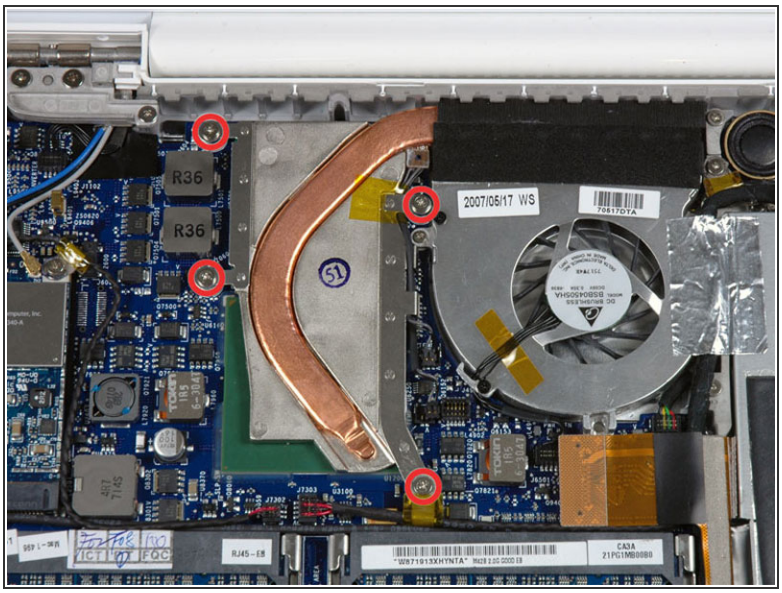
Step 15



- Use a spudger to disconnect the two newly-revealed temperature sensor connectors from the logic board.

If you have a MacBook Core 2 Duo Santa Rosa/Penryn, there is only one temperature sensor.

Step 16



- Remove the four Phillips screws securing the heat sink to the lower case.

Be sure to secure the ground loop for the speaker cable beneath the screw in the lower right corner when replacing the heat sink.

If you have a MacBook Core 2 Duo Santa Rosa/Penryn, the two Philips screws on the right are in a different location.

Step 17

- Lift the heat sink out of the computer, making sure the black tape doesn't catch on the heat sink.

If you need to mount the heat sink back into the laptop, we have a thermal paste guide that makes replacing the thermal compound easy.

To reassemble your device, follow these instructions in reverse order.

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